

FCS04 - SOP for Safe Handling and Analysis for CDS in Syringes

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1. Scope

- 1.1. This method outlines the analytical procedure for the safe handling and removal of liquids or residues from syringes for testing of Controlled Dangerous Substances (CDS). While this method provides general guidance and structure to the analytical process, due to the unpredictability of real-world samples, method variations may occur. In such cases, deviations shall be recorded in case notes.

2. Background

- 2.1. To establish the practices for analysis of items of evidence to ensure conformance to the requirements of the Department of Forensic Sciences (DFS) Forensic Chemistry Unit (FCU) *Quality Assurance Manual* and any supplemental standards.

3. Safety

- 3.1. Wear personal protective equipment (e.g., lab coat, gloves, mask, eye protection), when carrying out standard operating procedures.
- 3.2. Read Safety Data Sheets (SDS) to determine the safety hazards for chemicals and reagents used in the standard operating procedures.

4. Materials Required

- 4.1. Syringe Securing Device – To minimize injury to the laboratorian, the needle shall be secured during receipt and storage within a fully-enclosed needle container, such as (or their equivalents):
 - 4.1.1. Syringe Keeper (8", catalog no. #A-1910), or equivalent (Arrowhead Forensics, Lenexa, KS), or
 - 4.1.2. Syringe Transport Tube (1"x8", catalog no. ECT2), or equivalent (Sirchie, Youngsville, NC), or
 - 4.1.3. Hypodermic Syringe Safety Container (8", catalog no. #1-5100), or equivalent (CSI Forensic Supply, Pacheco, CA).
- 4.2. Sharps Syringe Disposal Container
 - 4.2.1. Sharps Container (1 Quart, catalog S-15307), or equivalent (Uline, Allentown, PA), or
 - 4.2.2. Sharps Container System (1 Quart, catalog 19001-001), or equivalent (VWR, Bridgeport, NJ).
- 4.3. Wash Chemicals (including mixtures or solutions thereof)
 - 4.3.1. Methanol (MS grade, for needle washing)
 - 4.3.2. Acetonitrile (MS grade, for needle washing)
 - 4.3.3. Chloroform (MS grade, for needle washing)
- 4.4. Consumables
 - 4.4.1. 2mL vials and caps, or equivalent
 - 4.4.2. 250µL insert sleeves, or equivalent
- 4.5. Narcan Spray
 - 4.5.1. Naloxone Spray-Nasal 4mg

5. Standards and Controls

- 5.1. N/A

6. Calibration

- 6.1. N/A

7. Procedures

- 7.1. Sharps shall only be handled when another person is present.

- 7.1.1. Note: The Forensic Chemistry Unit has a two-person policy for case analysis, but sharps have additional risk and it is especially important to ensure this policy is followed.
- 7.2. Proper PPE will be employed during the handling of all sharps, including:
 - 7.2.1. Double gloves or sharps gloves
 - 7.2.2. Protective glasses
 - 7.2.3. Lab coat
- 7.3. The syringe and all subparts are consumed in the testing and properly disposed in a biohazard-labeled Sharps Container.
 - 7.3.1. Only the liquid may be retained after testing is concluded.
- 7.4. Removal of bulk liquid:
 - 7.4.1. Extract the liquid into an appropriate container for analysis.
 - 7.4.2. Dispose of the syringe in an appropriate Sharps Container.
 - 7.4.3. Note: Not all needle/syringe systems are the same. If a concern arises or a deviation is required, consult with the Unit Manager prior to liquid extraction.
- 7.5. Washing residue
 - 7.5.1. Pull a small quantity of solvent into the syringe chamber, and then remove liquid for analysis, or
 - 7.5.2. Use a pipette to rinse trace amounts of liquid off the syringe or within the chamber.
 - 7.5.3. After the wash is performed, dispose of the syringe in an appropriate Sharps Container.
- 7.6. Syringe Injury Procedure
 - 7.6.1. Clean the wound and affected area thoroughly with soap and water.
 - 7.6.2. Report the incident to the FCU Unit Manager or laboratory director and the Health and Safety Officer.
 - 7.6.3. Call the Health and Safety Officer at (202) 481-3413.
 - 7.6.4. If symptoms of an opioid overdose occur, administer Naloxone Spray (see section 7.7 below for information on administration).
 - 7.6.5. Seek medical attention immediately.
 - 7.6.5.1. Note: George Washington University Hospital is the closest hospital. Its address is 900 23rd St NW, Washington, DC 20037.

7.6.6. Call Occupational Health Consultants and notify them of all steps that have been taken if the Health and Safety Officer has not done so already. Contact information is provided below:

7.6.6.1. Address: 15005 Shady Grove Road, Suite 450, Rockville, MD 20850.

7.6.6.2. Phone number: 301-738-6420.

7.6.6.3. Occupational Health Consultants' office has an answering service that will immediately contact Dr. Sauri in case of after-hours emergency or if nobody picks up the phone.

7.6.7. Follow subsequent reporting procedures as outlined in *DOM13 Health and Safety Manual*.

7.7. Naloxone spray

7.7.1. Naloxone (Narcan) nasal spray is available in the laboratory and should be used in the event of a suspected opioid exposure or overdose.

7.7.1.1. Symptoms of an overdose may include unusual sleepiness, unusual difficulty waking up, breathing problems (ranging from slow/shallow breathing to no breathing), very small "pinpoint" pupils, slow heartbeat, or low blood pressure.

7.7.2. Give a dose of Narcan immediately upon development of any of these symptoms in the event of a suspected exposure, then call 911 after administration, no matter whether or not the dose appeared to be effective.

7.7.3. Dosage Administration Instructions (from provided prescription information)

7.7.3.1. Lay the person on their back.

7.7.3.2. Tilt the person's head back and support their neck with your hand.

7.7.3.3. Use your other hand to gently insert the tip of the spray nozzle into one nostril, then firmly press the plunger to give the dose.

7.7.3.4. Remove the spray nozzle from the nostril and move the person onto their side as directed by the manufacturer.

7.7.3.5. Seek medical help immediately (call 911). Inform them that naloxone has been administered.

7.7.3.6. Call Occupational Health Consultants office and notify him of all steps that have been taken.

7.7.4. Each spray contains one dose and cannot be reused.

7.7.5. Two doses may be necessary if the person does not respond after one dose.

7.7.6. Naloxone will be kept in the laboratory first aid kits and will be replenished as soon as possible if used.

7.7.7. Refer to the prescription information for other medical information relating to naloxone.

8. Sampling

8.1. N/A

9. Calculations

9.1. N/A

10. Uncertainty of Measurement

10.1. N/A

11. Limitations

11.1. N/A

12. Documentation

12.1. FCU Examination Worksheets

12.2. FCU Report of Results

13. References

13.1. Forensic Chemistry Unit Quality Assurance Manual, (current revision).

13.2. DOM13 Health and Safety Manual, (current revision).

13.3. CVS Pharmacy Patient Prescription Information for Naloxone

13.4. Narcan Prescribing Information (Available online at <https://www.narcan.com/pdf/NARCAN-Prescribing-Information.pdf>)